

FIG. 1

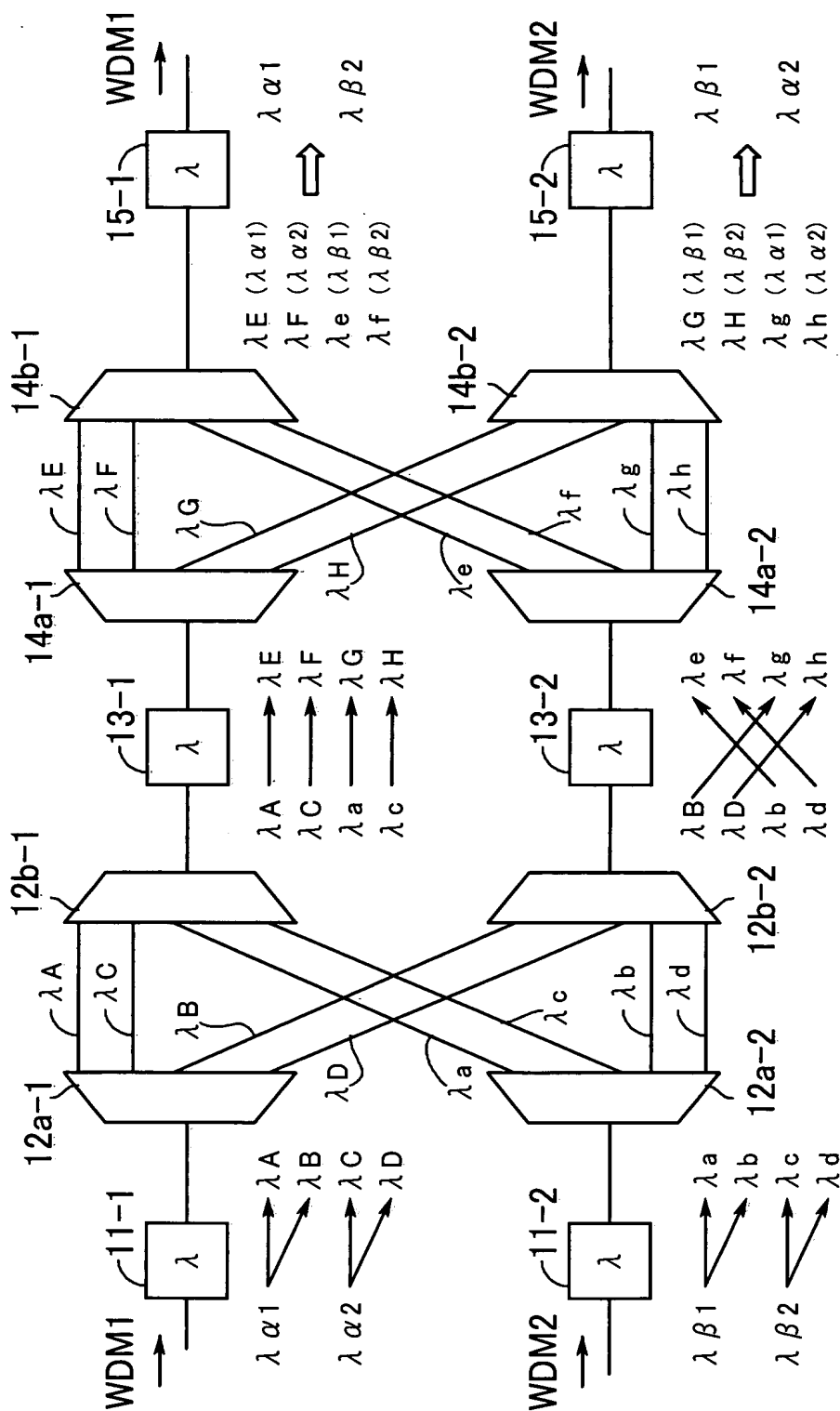


FIG. 2

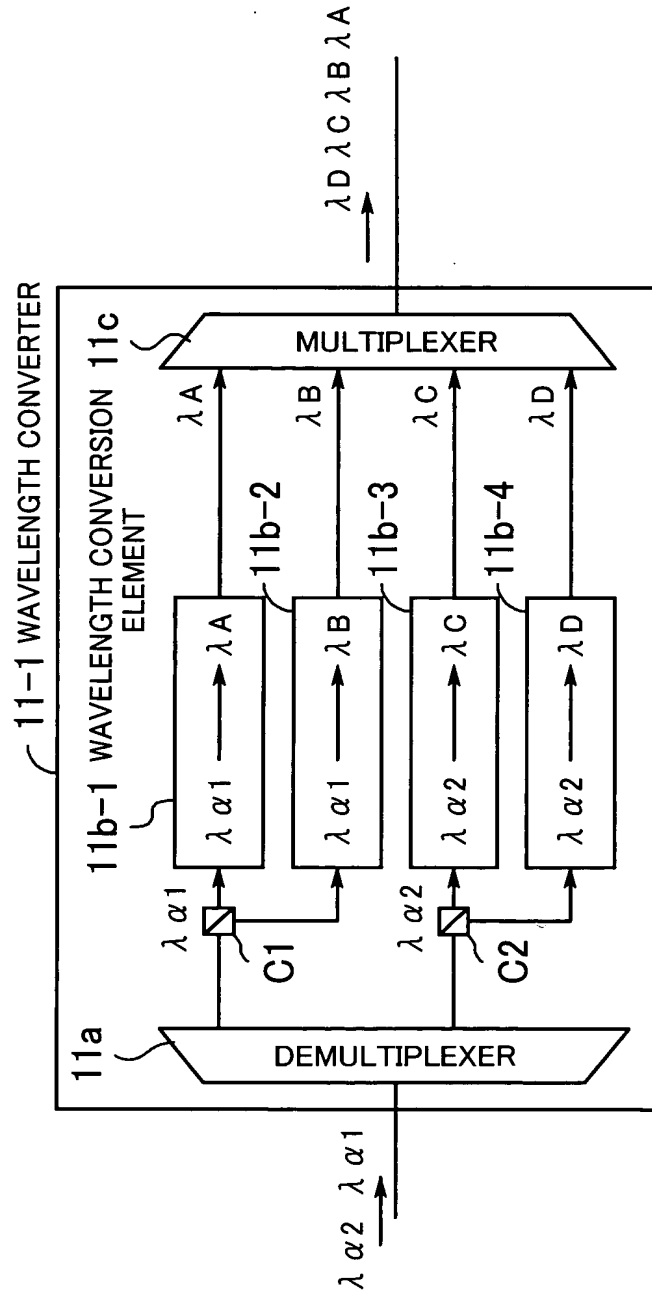


FIG. 3

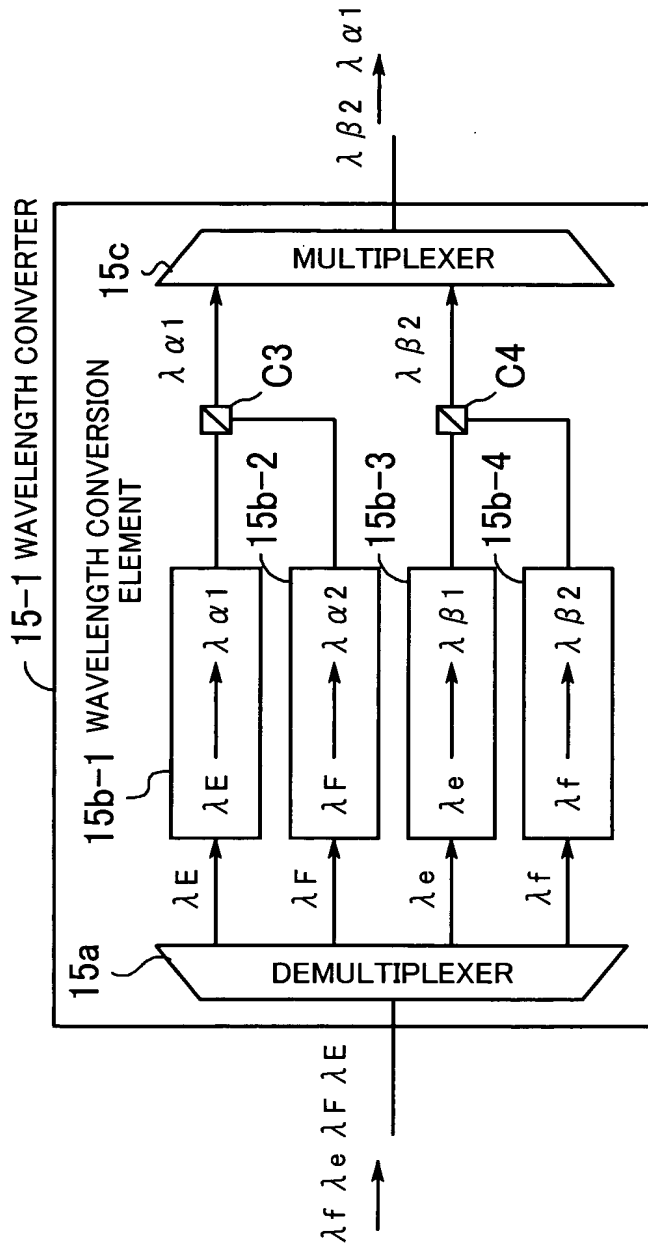


FIG. 4

WHEN OUTGOING LINES CORRESPONDING TO (m-1)
 INCOMING LINES HAVE BEEN ESTABLISHED IN AN m x m SWITCH,
 THE DESTINATION OF THE REMAINING PATH IN A SWITCH WILL BE DETERMINED.

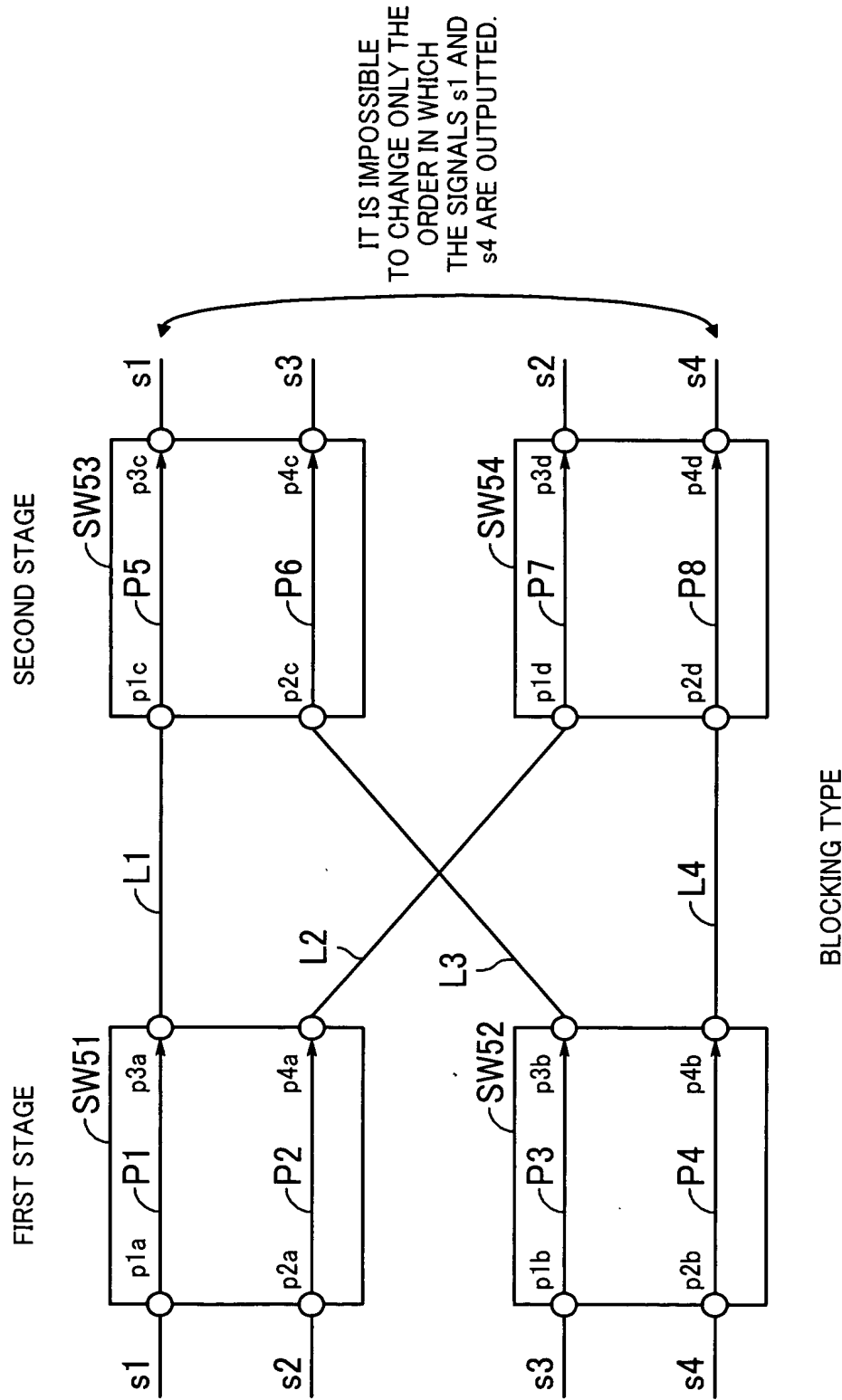


FIG. 5

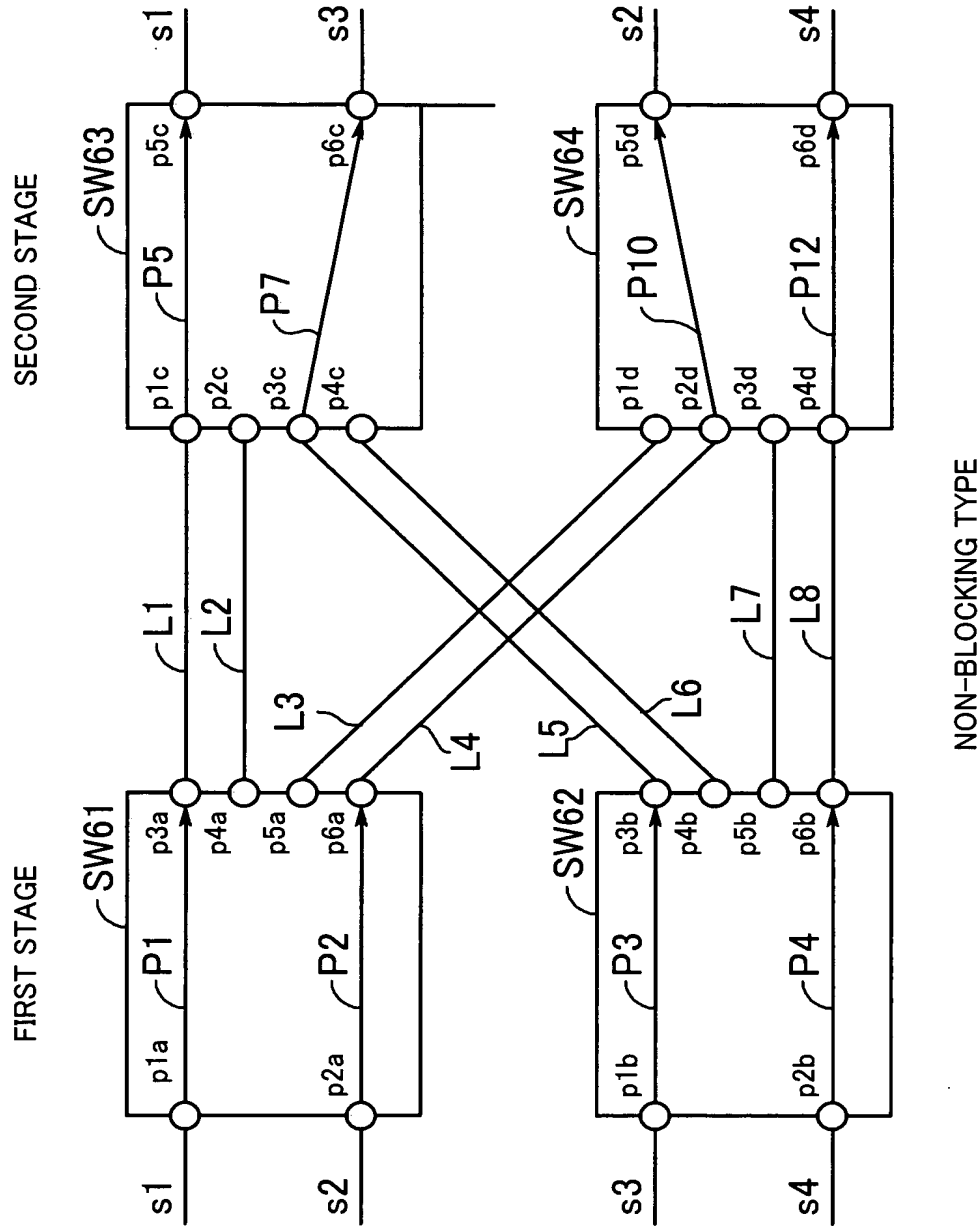


FIG. 6

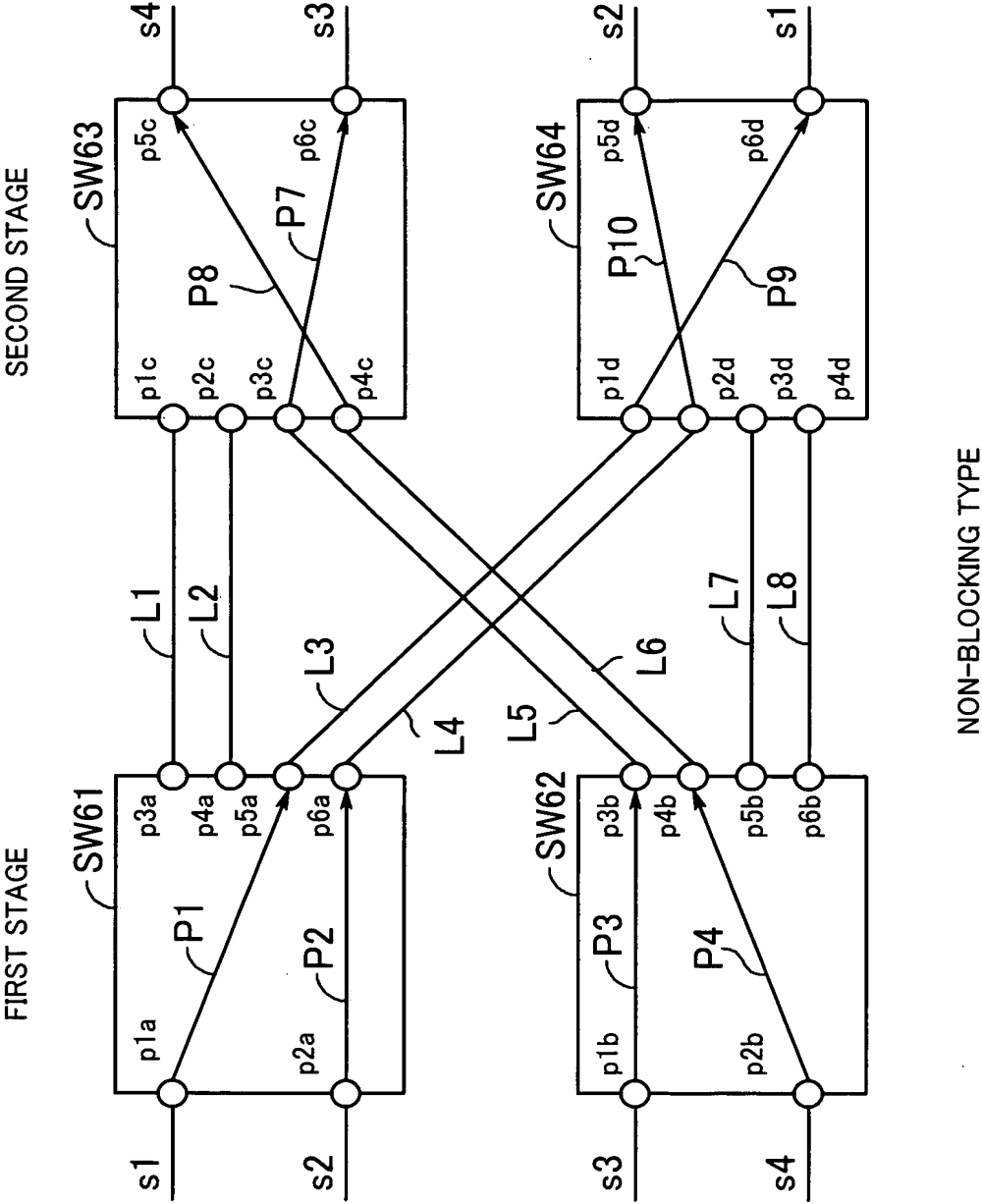


FIG. 7

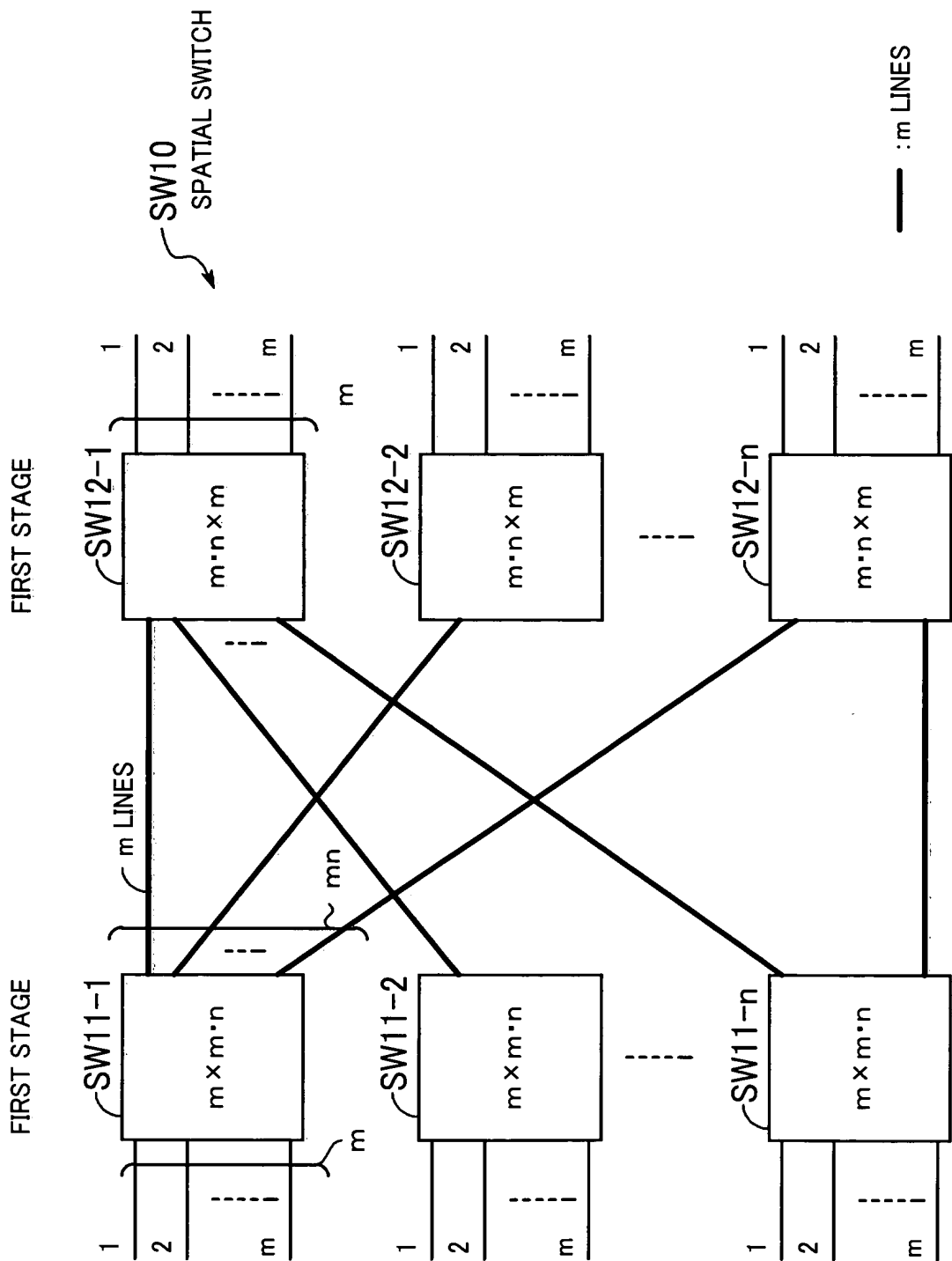


FIG. 8

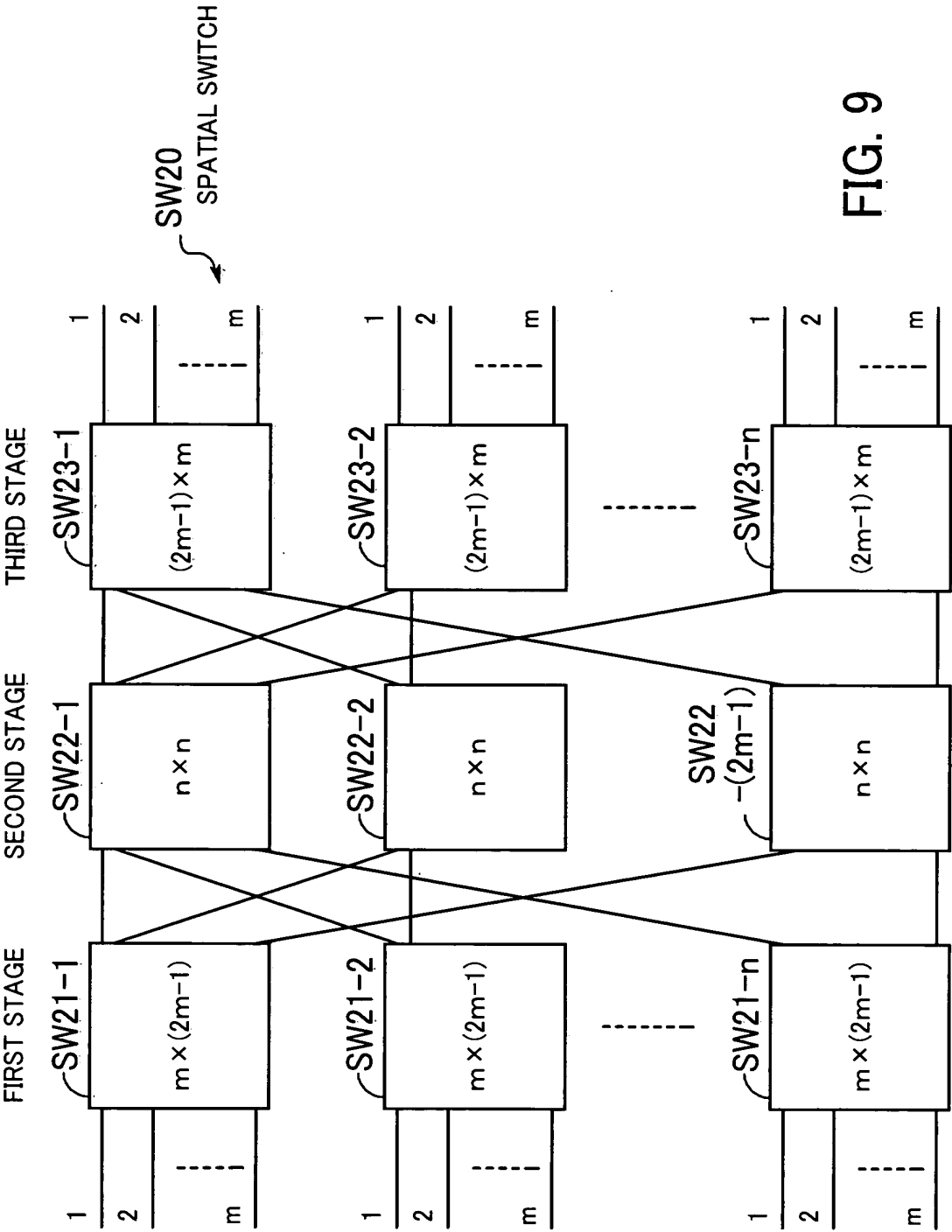


FIG. 9



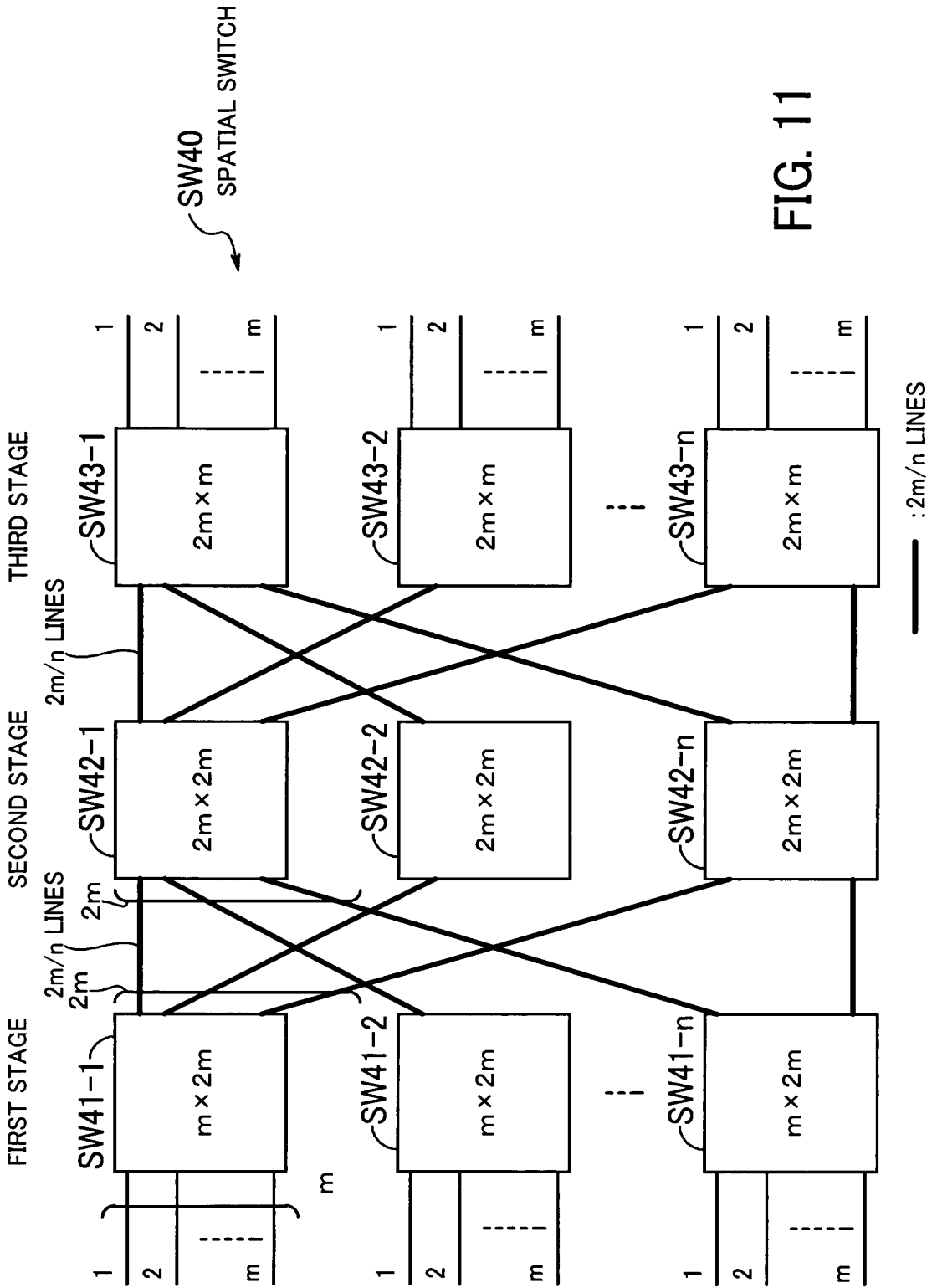


FIG. 11

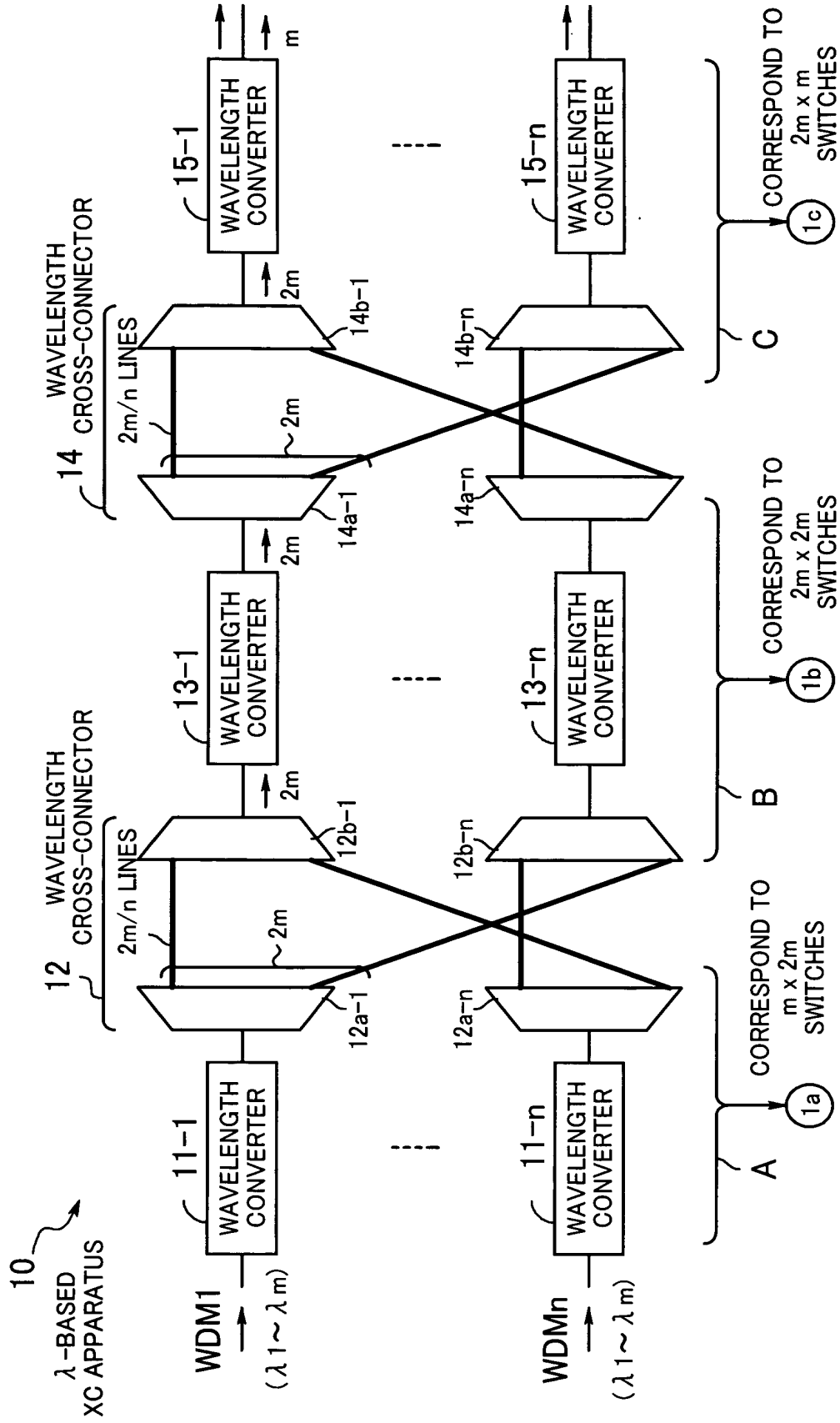


FIG. 12

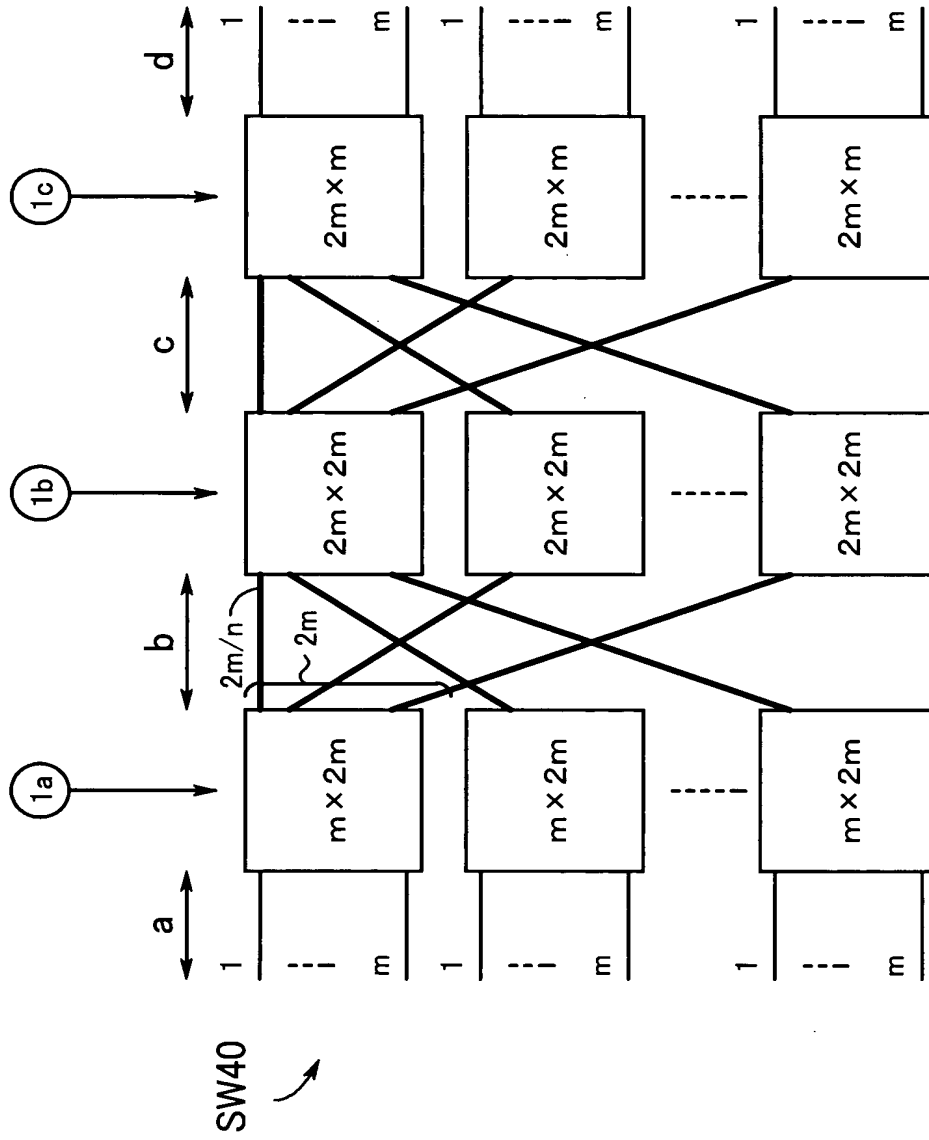


FIG. 13

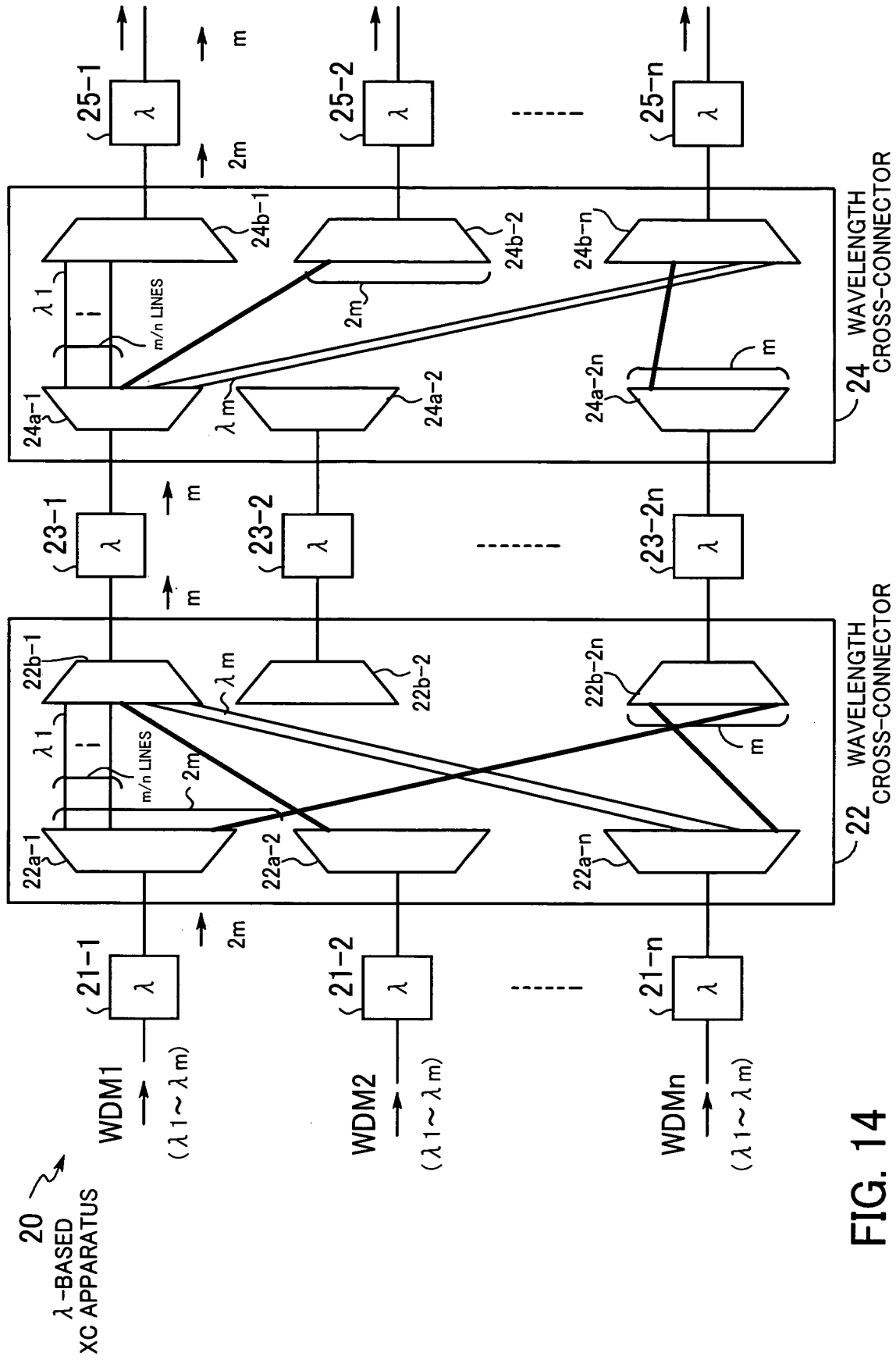
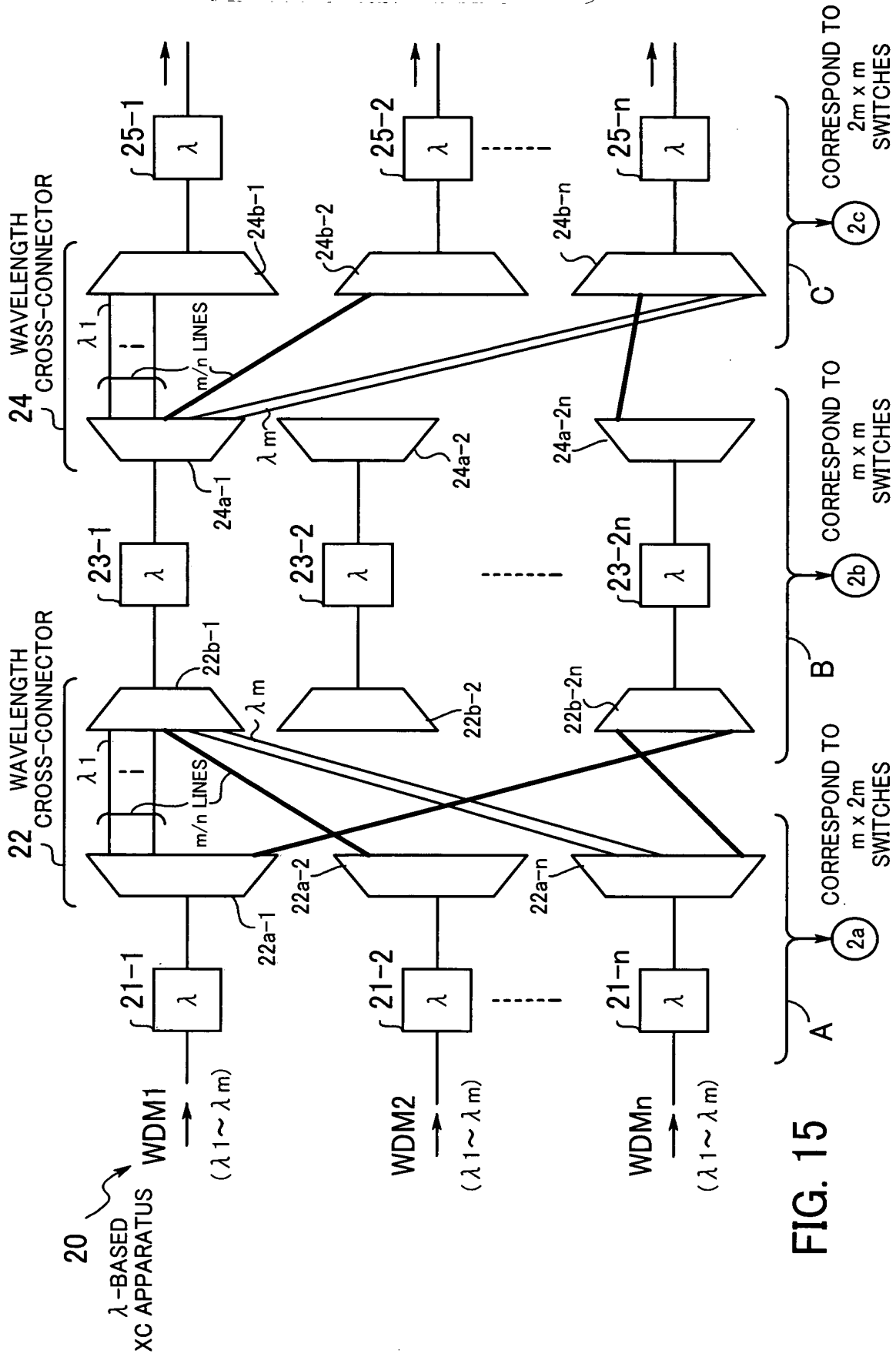


FIG. 14



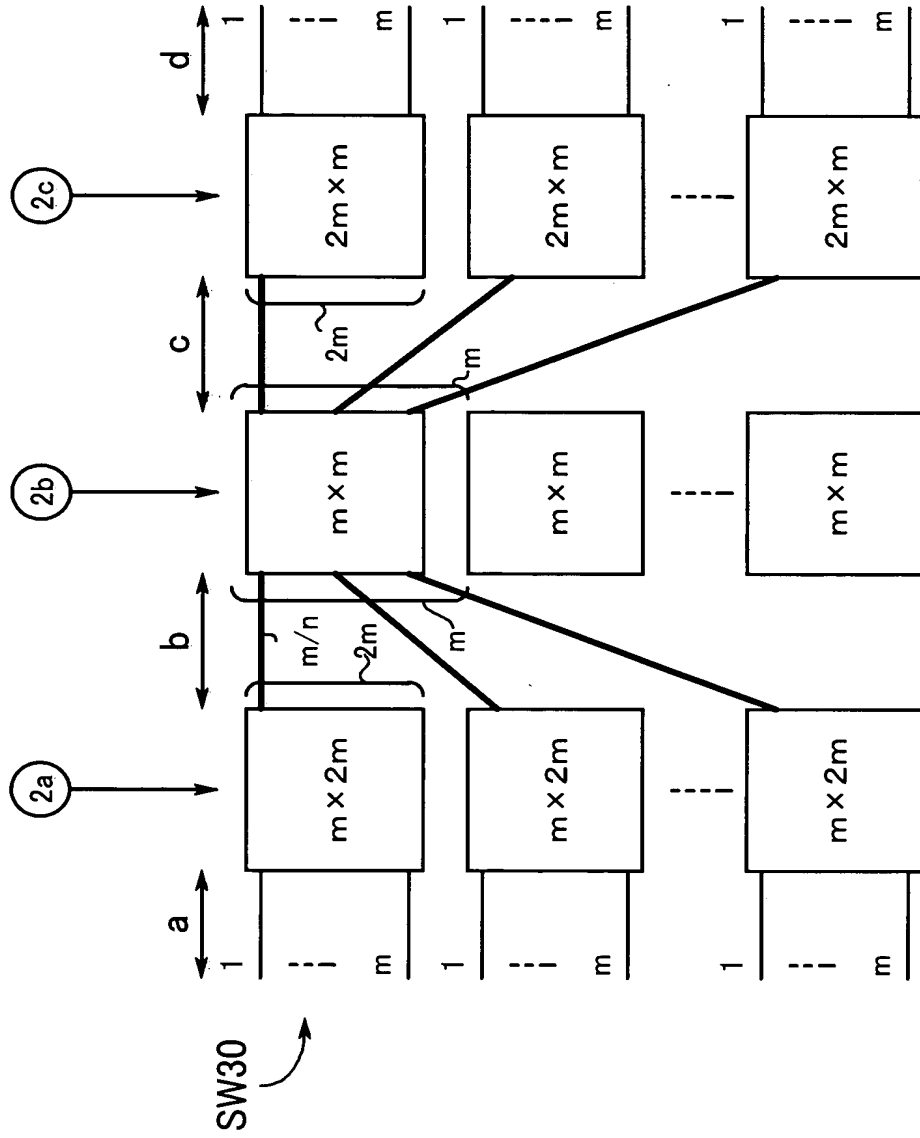


FIG. 16

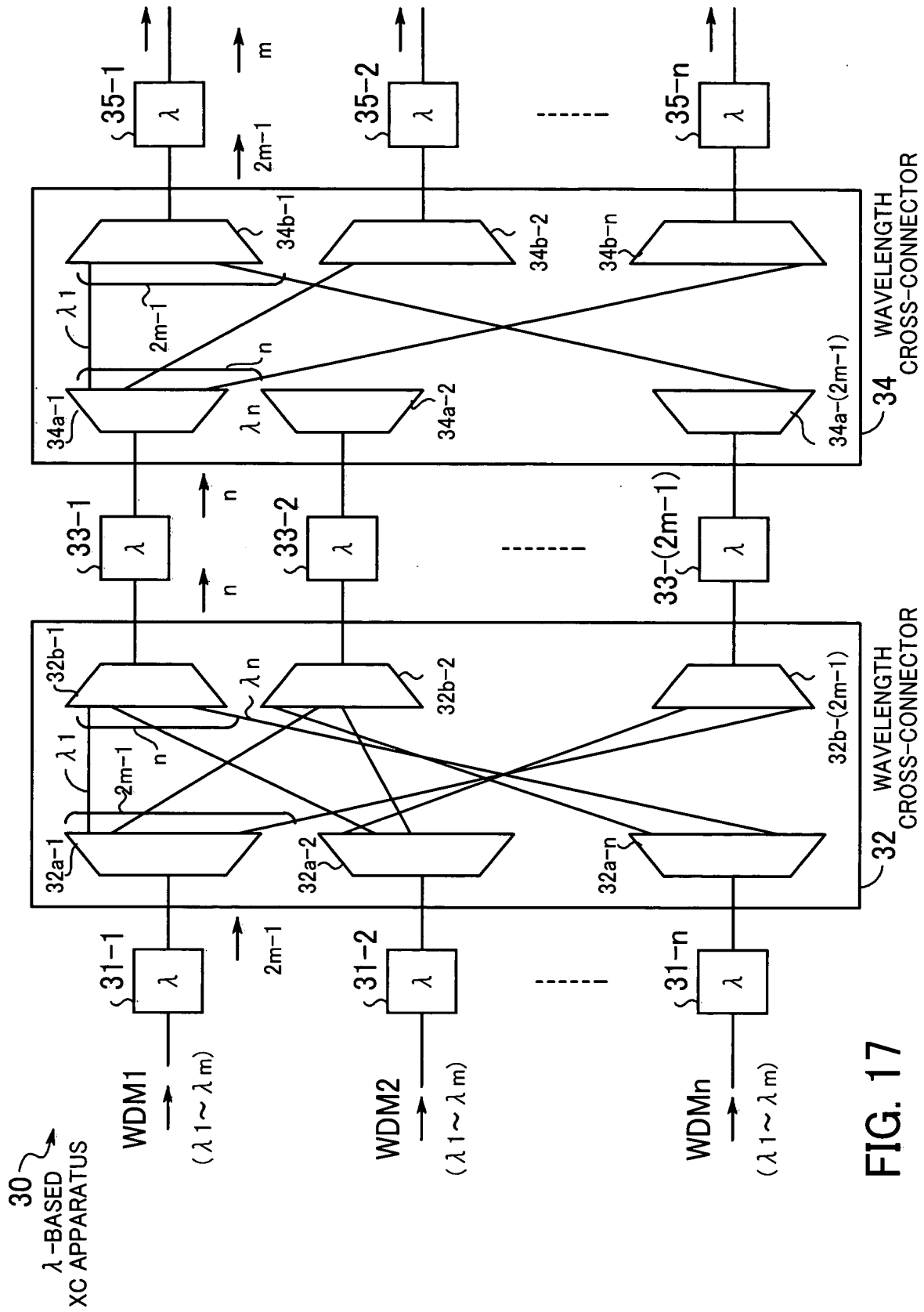


FIG. 17

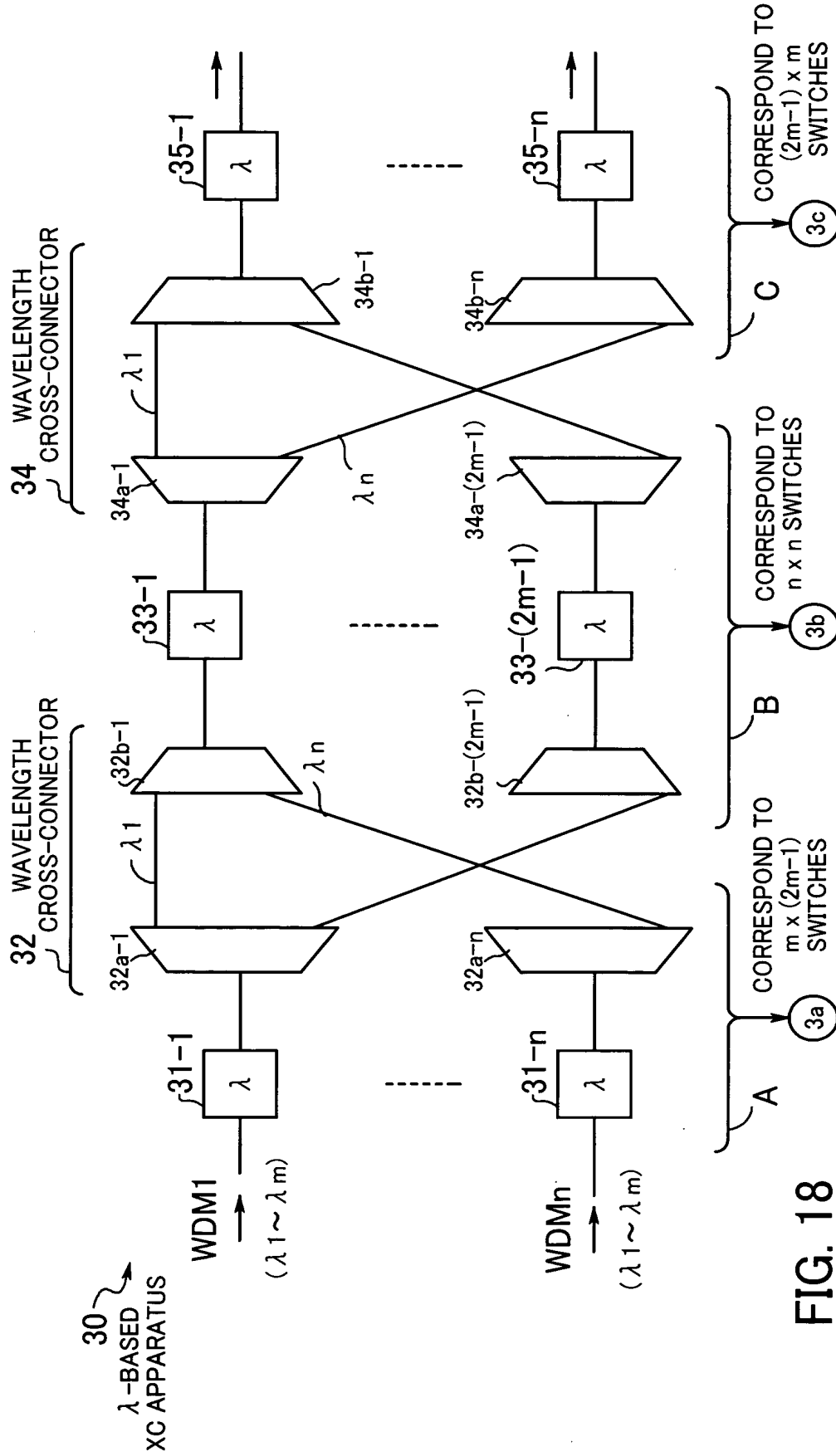


FIG. 18

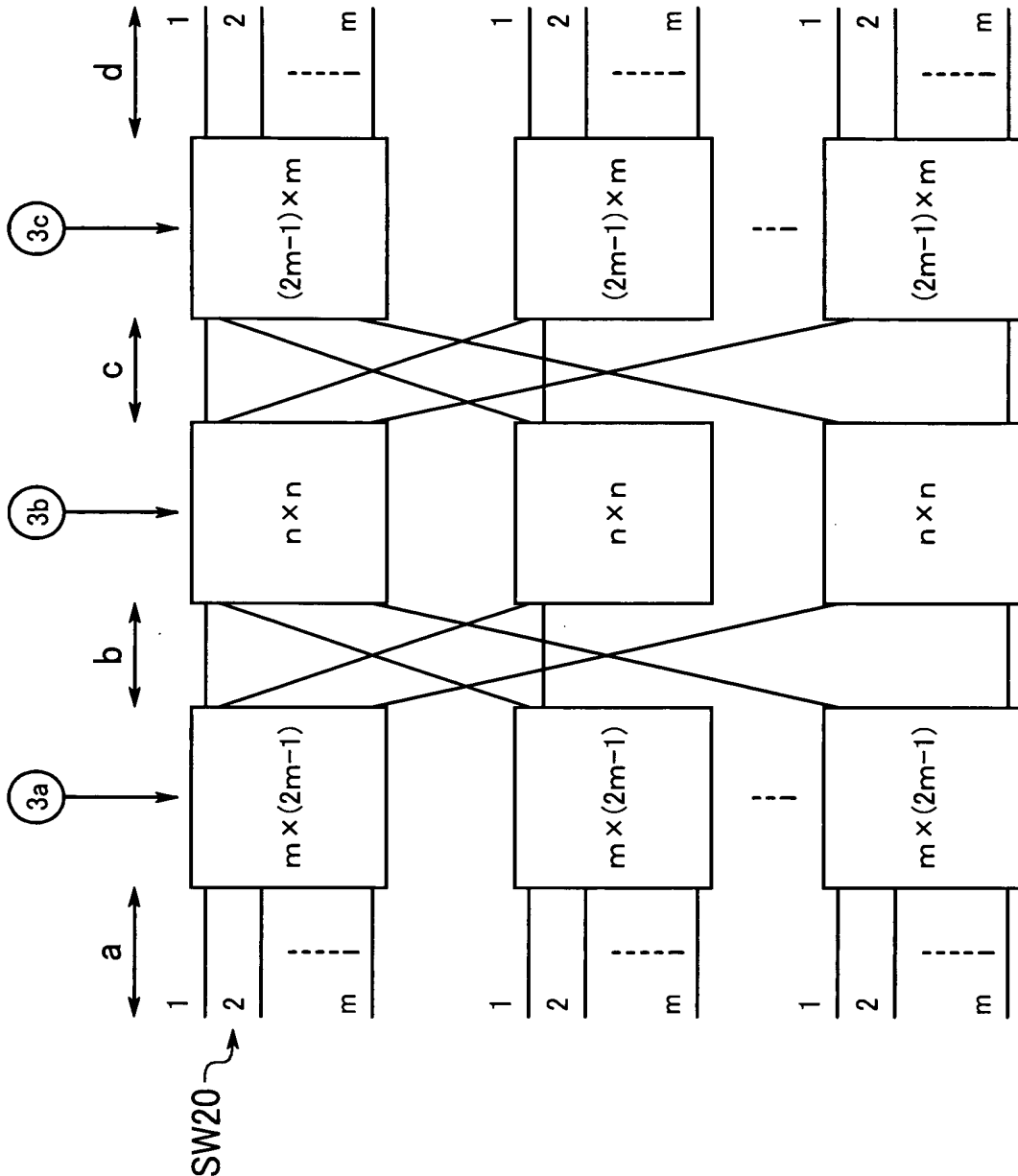
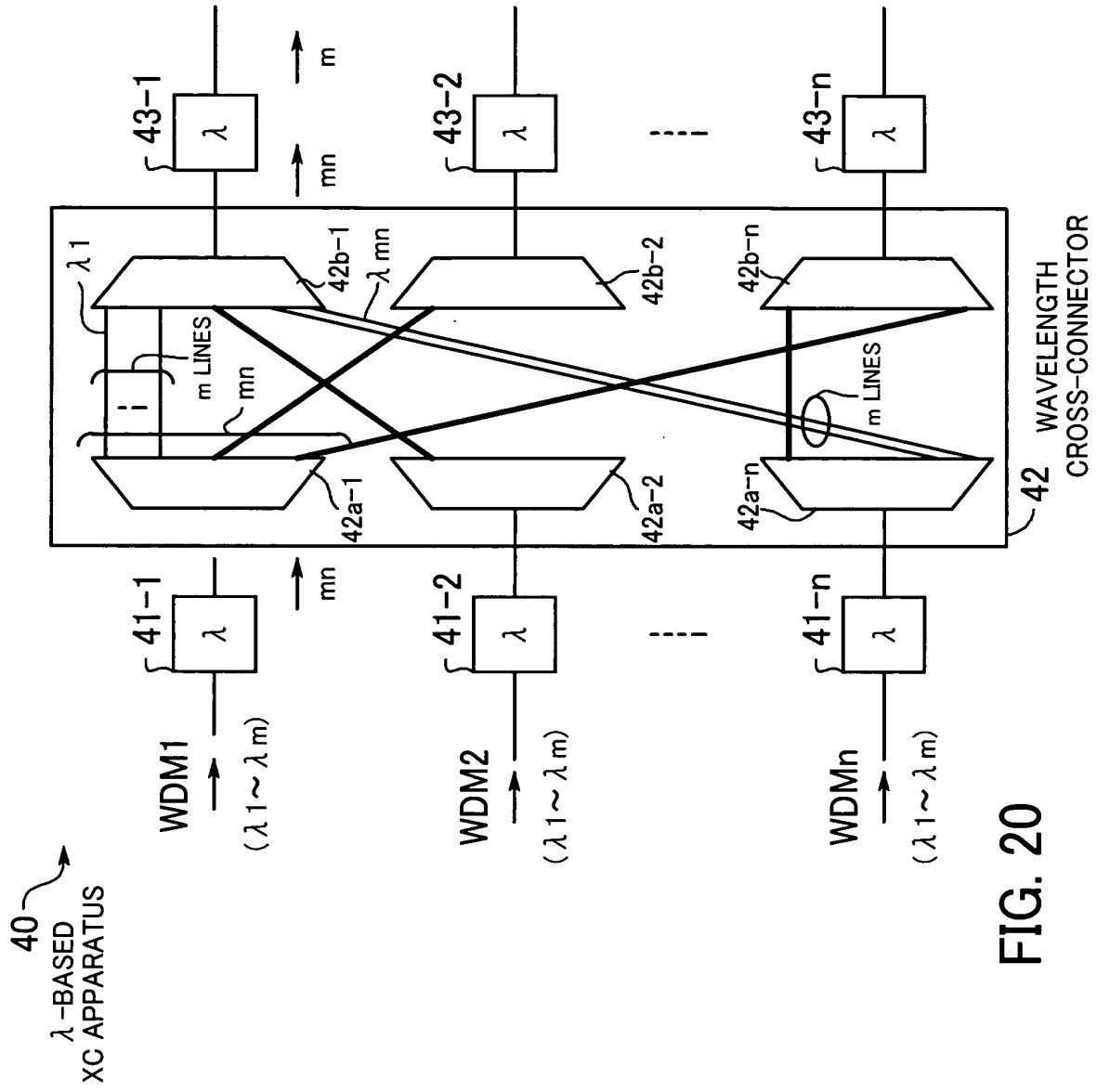


FIG. 19



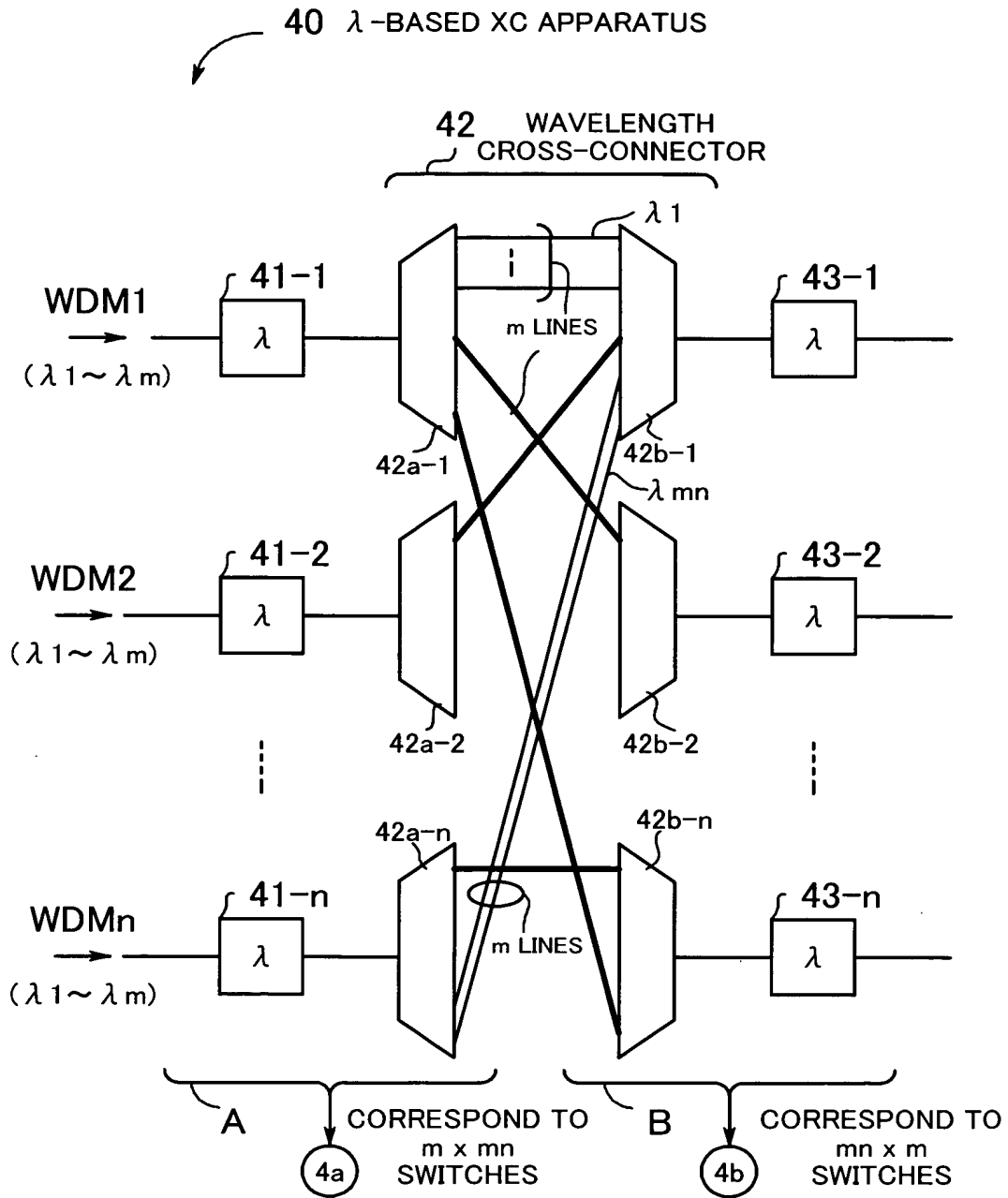
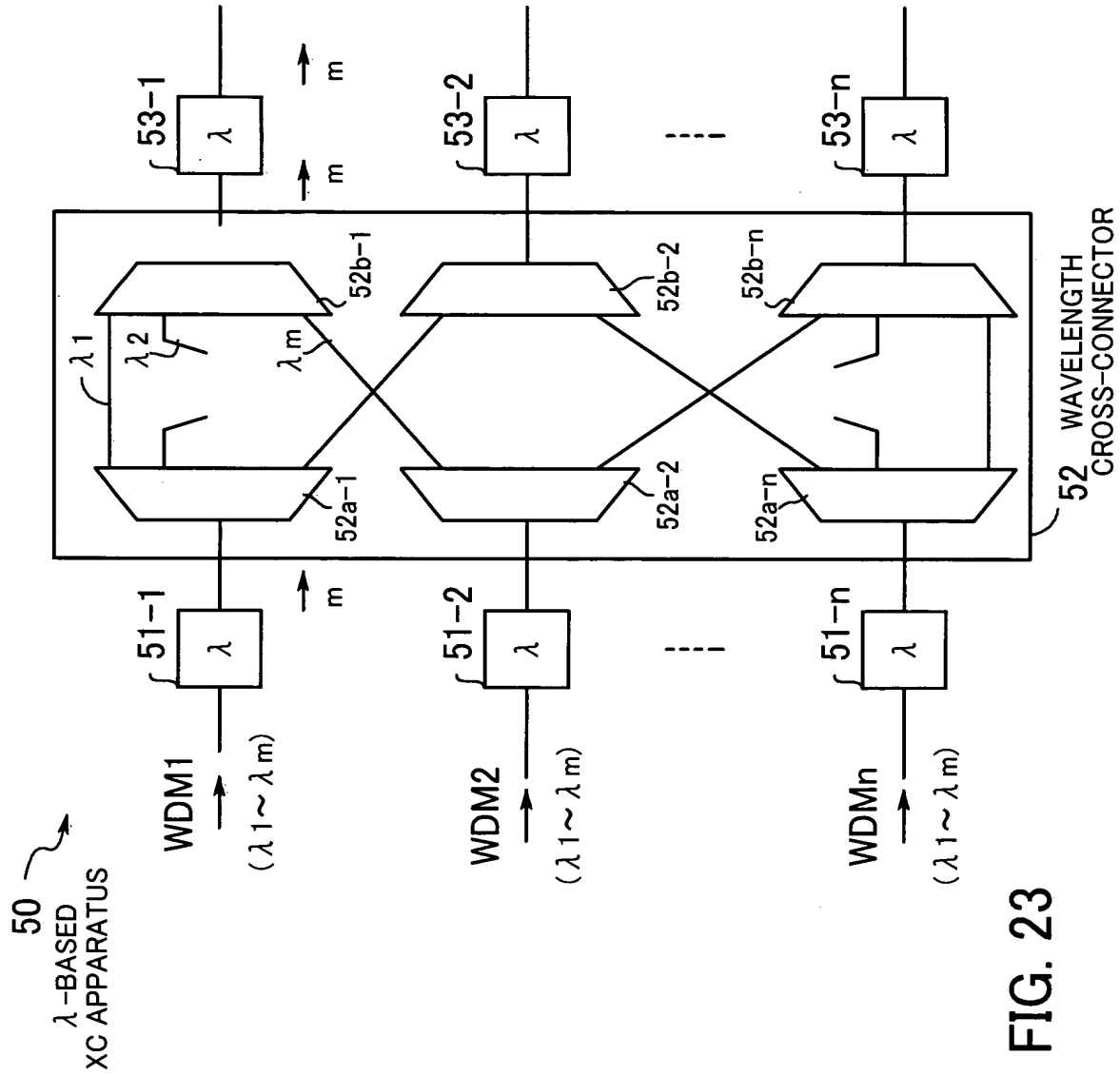


FIG. 21



FIG. 22



T1

	NUMBER OF AWGS INCLUDED IN WAVELENGTH CROSS-CONNECTORS					NUMBER OF AWGS INCLUDED IN WAVELENGTH CONVERTERS				
	$2m\lambda$	$m\lambda$	$(2m-1)\lambda$	$n\lambda$	$mn\lambda$	$2m\lambda$	$m\lambda$	$(2m-1)\lambda$	$n\lambda$	$mn\lambda$
λ -BASED XC APPARATUS 10	4n					4n	2n			
λ -BASED XC APPARATUS 20	2n	4n				2n	6n			
λ -BASED XC APPARATUS 30			2n	$2(2m-1)$			2n	2n	$2(2m-1)$	
λ -BASED XC APPARATUS 40					2n		2n			2n
λ -BASED XC APPARATUS 50		2n					4n			

FIG. 24

T2

	NUMBER OF WAVELENGTH CONVERTERS						
	$m \leftrightarrow m$	$m \leftrightarrow 2m$	$m \leftrightarrow 2m-1$	$2m \leftrightarrow 2m$	$n \leftrightarrow n$	$mn \leftrightarrow mn$	
λ -BASED XC APPARATUS 10		$2n$		n			
λ -BASED XC APPARATUS 20	$2n$	$2n$					
λ -BASED XC APPARATUS 30			$2n$		$2m-1$		
λ -BASED XC APPARATUS 40						$2n$	
λ -BASED XC APPARATUS 50	$2n$						

FIG. 25